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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/608,632	06/30/2000	Rajesh R. Shah	219.38572X00	9379

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EXAMINER

ANYA, CHARLES E

ART UNIT	PAPER NUMBER
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2126

DATE MAILED: 04/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/608,632

Applicant(s)

SHAH, RAJESH R.

Examiner

Charles E Anya

Art Unit

2126

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3/MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5,6,8-22 and 25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6,8-22 and 25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1,2,5,6,8-22 and 25 are pending in this application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1,6,10,12,13,14,17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. 6,256,740 B1 to Muller et al. in view of U.S. Pat. No. 6,578,142 B1 to Anderson et al.**

4. As to claim 1, Muller teaches a method of loading a driver in a host coupled to an interconnection fabric including one or more fabric-attached I/O enclosures, comprising: assigning an I/O controller that is within an I/O enclosure to the host (Col. 4 Ln. 50 – 67).

5. Muller is silent with reference to loading a driver for the I/O controller into the host after sending a verification message to the I/O enclosure, via the interconnection fabric, to determine whether a communication path exists to the I/O controller within the I/O enclosure and if the I/O enclosure responds to the verification message, then loading the driver into the host.

6. Anderson teaches loading a driver for the I/O controller into the host after sending a verification message to the I/O enclosure, via the interconnection fabric, to determine whether a communication path exists to the I/O controller within the I/O enclosure and if the I/O enclosure responds to the verification message, then loading the driver into the host (figure 7 Col. 12 Ln. 22 – 67).

7. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Anderson and Muller because the teaching of Anderson would improve the system of Muller by a means of downloading software (Anderson Col. 12 Ln. 22 – 67).

8. As to claim 6, Muller teaches a method of loading a driver in a host coupled to an interconnection fabric including different hosts and I/O enclosures, comprising assigning a plurality of I/O controllers that are within a plurality of I/O enclosures to a plurality of hosts (Col. 4 Ln. 50 – 67).

9. Muller is silent with reference to determining a list of a plurality of drivers that corresponds to the plurality to be loaded into the plurality of hosts the plurality of drivers corresponding to the plurality of I/O controllers, before loading the plurality of drivers into the plurality of hosts, for each of the plurality of drivers drive, sending a verification message to the I/O controller that corresponds to the driver; and modifying the list of plural of drivers if a response to any of the verification messages is received.

10. Anderson teaches determining a list of a plurality of drivers that corresponds to the plurality to be loaded into the plurality of hosts the plurality of drivers corresponding

to the plurality of I/O controllers, before loading the plurality of drivers into the plurality of hosts, for each of the plurality of drivers drive, sending a verification message to the I/O controller that corresponds to the driver; and modifying the list of plural of drivers if a response to any of the verification messages is received (Col. 9 Ln. 1 – 67, figure 7 Col. 12 Ln. 22 – 67).

11. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Anderson and Muller because the teaching of Anderson would improve the system of Muller by a means of downloading software (Anderson Col. 12 Ln. 22 – 67).

12. As claim 10, Anderson teaches the method as claimed in claim 6, further comprising: obtaining the list of plurality of drivers from a storage (figure 3 Col. 9 Ln. 57 – 67).

13. As to claim 12, Muller teaches the method as claimed in claim 6, further comprising: notifying a fabric control driver when local channel adapter ports in a given one of the plurality of hosts is host configured and ready for fabric connectivity (Col. 12 Ln. 34 – 45).

14. As to claim 13, see the rejection of claim 6.

15. As to claim 14, Muller as modified is silent with reference to the computer readable medium as claimed in claim 13, further comprising: receiving an interrupt before modifying the list of plurality of drivers, however one of ordinary skill in the art would have known at the time of invention to modified the system of Muller since another process may be using the processor at the time of loading the drivers thus an interrupt is needed in order to use the processor.

16. As to claims 17 and 19, see the rejection of claims 10 and 12 respectively.

17. Claims 2,5,11,18,21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. 6,256,740 B1 to Muller et al. in view of U.S. Pat. No. 6,578,142 B1 to Anderson et al. as applied to claim 1 above, and further in view of U.S. Pat. No. 4,845,609 to Lighthart et al.

18. As to claim 2, Muller as modified is silent with reference to the method as claimed in claim 1, further comprising: alternatively, before loading the driver for the I/O controller into the host, determining whether a host-fabric adapter in the host has been initialized and connected to the interconnection fabric and if the host-fabric adapter in the host has been initialized and connected to the interconnection fabric, then loading the driver into the host.

19. Lighthart teaches the method as claimed in claim 1, further comprising: alternatively, before loading the driver for the I/O controller into the host, determining

whether a host-fabric adapter in the host has been initialized and connected to the interconnection fabric; and if the host-fabric adapter in the host has been initialized and connected to the interconnection fabric, then loading the driver into the host (Lighthart Col. 13 Ln. 4 – 46).

20. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Lighthart and Muller because the teaching of Lighthart would improve the system of Muller by making sure the adapter is functional because starting the operating system (Lighthart Col. 13 Ln. 10 – 15).

21. As to claim 5, see the rejection of claims 1 and 2.

22. As to claim 11, Muller as modified is silent with reference to the method as claimed in claim 6, wherein: receipt of the response confirms that initialization has been completed of a local channel adapter port, a remote channel adapter port, and forwarding tables in intervening switches within the interconnection fabric that will be used in communication between a given one of the plurality of drivers to be loaded and a corresponding one of the e plural of I/O controllers (Col. 13 Ln. 4 – 46).

23. As to claim 18, see the rejection of claim 11.

24. As to claim 21, Muller teaches the network as claimed in claim 20, wherein: the interconnection fabric includes one or more intervening switches having forwarding

tables for forwarding data from the host to the fabric-attached I/O controller (figures 1/2 Col. 4 Ln. 9 – 67).

25. Muller is silent with reference to the operating system that includes a fabric control driver to provide bus abstraction and to result in the loading of the driver for the corresponding fabric-attached I/O controller, including determining whether a communication channel to the fabric-attached I/O controller exists before loading into the host the driver that corresponds to the fabric-attached I/O controller.

26. Anderson teaches the operating system that includes a fabric control driver to provide bus abstraction and to result in the loading of the driver for the corresponding fabric-attached I/O controller, including determining whether a communication channel to the fabric-attached I/O controller exists before loading into the host the driver that corresponds to the fabric-attached I/O controller (figure 7 Col. 12 Ln. 22 – 67).

27. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Anderson and Muller because the teaching of Anderson would improve the system of Muller by a means of downloading software (Anderson Col. 12 Ln. 22 – 67).

28. As to claim 22, Muller teaches the network as claimed in claim 21, wherein the control driver is notified when host-fabric adapter ports are configured and ready for fabric connectivity (Col. 12 Ln. 34 – 45).

29. Claims 8,9,15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. 6,256,740 B1 to Muller et al. in view of U.S. Pat. No. 6,578,142 B1 to Anderson et al. as applied to claim 6 above, and further in view of U.S. Pat. No. 6,263,387 B1 to Chrabaszc.

30. As to claim 8, Muller as modified is silent with reference to the method as claimed in claim 6, further comprising: determining the list of plurality of drivers, at least in part, by sending a message to a subnet manager to request a list of I/O controllers assigned to the plurality of hosts a host.

31. Chrabaszc teaches the method as claimed in claim 6, further comprising: determining the list of plurality of drivers, at least in part, by sending a message to a subnet manager to request a list of I/O controllers assigned to the plurality of hosts a host (Col. 5 Ln. 15 – 35, figure 8 Col. 10 Ln. 51 – 67, Col. 1 – 67).

32. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Chrabaszc and Muller because the teaching of Chrabaszc would improve the system of Muller by providing means of locating devices that need its drivers loaded (Chrabaszc Col. 5 Ln. 15 – 35).

33. As to claim 9, Muller as modified is silent with reference to the method as claimed in claim 6, further comprising: determining the list of plurality of drivers, at least in part, by scanning the interconnection fabric for I/O controllers.

34. Chrabaszcz teaches the method as claimed in claim 6, further comprising:
determining the list of plurality of drivers, at least in part, by scanning the
interconnection fabric for I/O controllers (Col. 5 Ln. 15 – 35, figure 8 Col. 10 Ln. 51 – 67,
Col. 1 – 67).

35. It would have been obvious to one of ordinary skill in the art at the time of the
invention was made to combine the teachings of Chrabaszcz and Muller because the
teaching of Chrabaszcz would improve the system of Muller by providing means of
locating devices that need its drivers loaded (Chrabaszcz Col. 5 Ln. 15 – 35).

36. As to claims 15 and 16, see the rejection of claims 8 and 9 respectively.

**37. Claims 20 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable
over U.S. Pat. 6,256,740 B1 to Muller et al. in view of U.S. Pat. No. 4,845,609 to
Lighthart et al.**

38. As to claim 20, Muller teaches a network comprising: an interconnection fabric; a
host comprising an operating system and at least one a host-fabric adapter provided to
interface with the interconnection fabric; and an I/O enclosure including at least one
fabric-attached I/O controller assigned to the host and attached to the interconnection
fabric; wherein, for a given host-fabric adapter of the at least one host-fabric adapter,
and for a given fabric-attached I/O controller of the at least one fabric-attached I/O

controller, the operating system within the host is capable of (figures 1/2 Col. 4 Ln. 9 – 67).

39. Muller is silent with reference to determining a if the given host-fabric adapter has been initialized for fabric communication and if the given host-fabric adapter has been initialized for fabric communication, loading a driver that corresponds to the given fabric-attached I/O controller assigned to the host, into the host for communication with the fabric-attached I/O controller, via the interconnection fabric.

40. Lighthart teaches determining a if the given host-fabric adapter has been initialized for fabric communication and if the given host-fabric adapter has been initialized for fabric communication, loading a driver that corresponds to the given fabric-attached I/O controller assigned to the host, into the host for communication with the fabric-attached I/O controller, via the interconnection fabric (Col. 13 Ln. 4 – 46).

41. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of Lighthart and Muller because the teaching of Lighthart would improve the system of Muller by making sure the adapter is functional because starting the operating system (Lighthart Col. 13 Ln. 10 – 15).

42. As to claim 25, Lighthart teaches the network as claimed in claim 20, wherein the driver sends a verification message to the I/O enclosure via the interconnection fabric (Col. 13 Ln. 10 – 15).

Response to Arguments

43. Applicant's arguments with respect to claims 1,2,5,6,8-22 and 25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles E Anya whose telephone number is (703) 305-3411. The examiner can normally be reached on M-F (8:30-6:00) First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, An Meng-Ai can be reached on (703) 305-9678. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Charles E Anya
Examiner
Art Unit 2126

Cea.


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